

REMARKS

Claims 1-6 are currently pending in the subject application, and are presently under consideration. Claims 1-6 are rejected and claim 4 has been amended. New claims 12-16 have also been added. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 4-6 under 35 U.S.C. 112

Claims 4-6 have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Claim 4 has been amended to clarify that a recited downstream modulator located in the headend facility receives signals corresponding to optical signals and for sending forward signals downstream to the at least one DHCT via an optical network terminal (ONT). The amendments to claim 4 are supported by at least FIG. 3 and Page 5, lines 25-28 of the Specification. Claim 4 does not recite an optical signal that is received directly at a downstream modulator. Applicant's representative respectfully submits that claim 4, as amended, as well as claims 5 and 6 that depend therefrom, are enabled by the Specification under 35 U.S.C. §112. Accordingly, withdrawal of this rejection is respectfully requested.

II. Rejection of Claims 1-3 under 35 U.S.C. 103(a)

Claims 1-3 have been rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Pub. No. 2002/0063924 by Kimbrough ("Kimbrough"), in view of U.S. Patent No. 6,857,132 to Rakib et al ("Rakib"). Applicant traverses this rejection for the following reasons.

The teachings of Kimbrough and Rakib, if combined as is being suggested in the Office Action, do not teach one of ordinary skill in the art to make the fiber-to-the-home (FTTH) system recited in claim 1. As explained below, claim 1 recites a particular combination of structural and functional interrelationships that simply are not taught or suggested in the art of record.

In rejecting claim 1, the Office Action states the following:

The optical network terminal (ONT) [52] converts the 1550 nm A/V Optical signal into RF signals (and) routes it to at least one digital home communications terminal (DHCT) associated with CATV [60] or DBS [58] of Fig. 1, through connector [172] for receiving the RF signals for distribution on TV (Office Action, Page 3).

Applicant's representative respectfully submits that neither the cable television (CATV) signal 60 nor the direct broadcast satellite (DBS) signal 58 disclosed in Kimbrough corresponds to the at least one DHCT recited in claim 1. In claim 1, the at least one DHCT receives RF signals from a modulator that receives downstream IP video and audio signals from an Ethernet switch. In sharp contrast, the CATV signal 60 and the DBS signal 58 disclosed in Kimbrough are provided by a QuPlexer 52. In Kimbrough, the QuPlexer 52 is a module that handles optics, optical to electrical conversions and optical multiplexing and demultiplexing of multimedia signals through a home network unit (HNU) 50 (See Kimbrough, Par. [0112]). Nothing in Kimbrough teaches or suggests that the QuPlexer 52 operates in a manner that corresponds to the operation of an Ethernet switch, such as recited in claim 1.

Moreover, nothing in Kimbrough teaches or suggests, that either the CATV signal 60 or the DBS signal 58 is provided by the Ethernet physical layer signal (PHY) interface 54 disclosed in Kimbrough, which the Office Action contends corresponds to the Ethernet switch recited in claim 1 (See Office Action, Page 3). Instead, in Kimbrough, Ethernet PHY interface 54 is provided to a computer (e.g., a PC) (See Kimbrough, FIG. 2). Since the Ethernet PHY interface 54 disclosed in Kimbrough does not provide the CATV signal 60 or the DBS signal 58 any structure (e.g., a set top box or a television) receiving the CATV signal 60 or the DBS signal 58 cannot correspond to the at least one DHCT recited in claim 1. Therefore, no structure or function disclosed in Kimbrough teaches or suggests the interrelationship between the modulator of the receiving device and the DHCT consistent with what is recited in claim 1. Specifically, in claim 1, the modulator (of the receiving device) receives downstream IP signals from the Ethernet switch, which signals are modulated to provide RF signals to the DHCT. In sharp contrast, the QuPlexer 52 disclosed in Kimbrough receives downstream optical signals that are converted to either a CATV signal 60 and/or a DBS signal 56.

Furthermore, the addition of Rakib does not make up for the deficiencies of Kimbrough. In rejecting claim 1, the Examiner contends that the cable modem 28 (incorrectly marked as ref. no. 20 on FIG. 1 of Rakib) corresponds to a modulator recited in claim 1. Applicant's representative respectfully disagrees. The modulator recited in claim 1 receives downstream IP video and audio signals from an Ethernet switch, and the modulator modulates the IP video and audio signals to provide RF signals. In Rakib, the disclosed cable modem 28 receives a

multiplexed signal (e.g., not an Ethernet signal) from transmitters 46, 48 and 50. Nothing in Rakib teaches or suggests that the cable modem 28 could be modified to receive downstream IP video and audio signals from an Ethernet switch, as does the modulator recited in claim 1. Instead, in Rakib, as best understood, the disclosed cable modem 28 provides Ethernet signals to a personal computer 110 (See Rakib, FIG. 1 and Col. 13, lines 38-40). Accordingly, the teachings of Kimbrough and Rakib, taken individually or in combination do not teach one of ordinary skill in the art to make the FTTH system recited in claim 1, since Kimbrough and Rakib fail to teach the interrelationship between the modulator and Ethernet switch recited in claim 1.

Still further, Applicant's representative submits that there is insufficient motivation to combine and modify the teachings of Kimbrough and Rakib in a manner that would make claim 1 obvious. Applicant's representative respectfully submits that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. ___, 127 S. Ct. 1727, 1741 (U.S. 2007) citing *In re Kahn*, 441 F.3d 997, 998 (CA Fed. 2006). In rejecting claim 1, the Office Action contends that it would have been obvious to combine and modify the FTTH system disclosed in Kimbrough with a cable modem on a customer premises as disclosed in Rakib in order to provide an efficiency video-on-demand service over cable TV systems as well as delivery of other services such as wideband Internet and T1 telephony access over cable TV systems (See Office Action, Pages 4-5). Applicant's representative respectfully submits that the Examiner's reasoning is not rational since it appears that Kimbrough already provides the services (Internet, video on demand and telephony services) without the inclusion of the cable modem disclosed in Rakib, which would make the cable modem superfluous. Thus, Applicant's representative submits that the only the only motivation for combining and modifying Kimbrough and Rakib appears to be based on improper hindsight. Since the Office Action provides no other evidence sufficient to establish a *prima facie* case of obviousness with respect to claim 1, claim 1, as well as claims 2-3 depending therefrom is patentable. Thus, withdrawal of this rejection is respectfully requested.

III. Rejection of Claim 4 under 35 U.S.C. 103(a)

Claim 4 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kimbrough and Rakib, in view of U.S. Patent No. 5,481,542 to Logston et al. ("Logston"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

In rejecting claim 4, the Office Action states the following:

Fig. 5A-5C of Logston illustrate the IP packet, Message Cell AAL5 and Message Cell format are used in communication from a subscriber premises [SST 30] to Headend [112], Logston teaches **wherein the at least one DHCT [SST 30] inserts the received modulator identification number as message cell header in the reverse header information as message cell payload** (Logston, col. 14, line 37-col. 15 line 2) (Office Action, Page 7 - emphasis in original text).

Applicant's representative respectfully submits that the Office Action has mischaracterized the cited section of Logston. The cited section of Logston fails to teach or suggest that a set-top terminal (SST) 30 inserts anything as a message cell header in reverse header information, in sharp contrast to the DHCT recited in claim 4. The cited section of Logston discloses a cell format used in signaling. The header format disclosed in Logston includes a path address, a channel address and header error control (See Logston, Col 14, lines 44-46). None of the path address, the channel address and the header error control disclosed in Logston correspond to a received modulator identification number, since nothing in Logston teaches or suggests that the data included in the header could identify a particular modulator, as does the modulator identification number recited in claim 4. Therefore, the cited section of Logston (and Logston, more generally) fails to teach or suggest that a DHCT inserts a received modulator identification number in reverse header information, as recited in claim 4.

Moreover, even under the Office Action's interpretation of Logston, Kimbrough taken in view of Rakib and in further view of Logston fails to make claim 4 obvious. The U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") has held that the test for obviousness is whether differences between the subject matter sought to be patented and the prior art are such that the subject matter *as a whole* would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains (emphasis added). *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1256 (Fed. Cir. 2007). When claim 4 is read *as a whole*, it is clear that claim 4 distinguishes between header information and payload data of reverse signals. Moreover, claim 4 recites that the at least one DHCT inserts a received

modulator identification number in the reverse header information. In sharp contrast, as noted above, the Office Action attempts to reject claim 4 under an interpretation of Logston that allegedly discloses adding data to a message cell payload, which does not correspond to the reverse message header information recited in claim 4.

Furthermore, claim 4 recites that a receiving device converts the modulator identification number into an IP address indicative of the modulator identification number. In rejecting this feature of claim 4, the Office Action cites column 19, line 22-column 20, line 24 of Logston (See Office Action, Page 7). Applicant's representative respectfully submits that the cited section of Logston discloses assigning an IP address to the STT 30 by a connection management computer (CMC) 40. By virtue of claim 4's dependence from claim 1, the receiving device recited in claim 1 is at a subscriber's premises. In sharp contrast, the CMC 40 disclosed in Logston is located at a headend facility (See Logston, Col. 6, line 34). Nothing in the cited section of Logston (or Logston, more generally) teaches or suggests that the SST 30 (or any other structure or function at a subscriber's premises) performs any function that corresponds to the conversion of a modulator identification number into an IP address indicative of the modulation identification number, as does the receiving device recited in claim 4. Accordingly, Kimbrough, taken in view of Rakib and in further view of Logston fails to teach or suggest the subject matter of claim 4 since Kimbrough taken in view of Rakib and in further view of Logston fails to teach or suggest the DHCT and the receiving device recited in claim 4. Additionally, since the Office Action provides no other evidence sufficient to establish a *prima facie* case of obviousness with respect to claim 4, claim 4 is patentable. Thus, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 5-6 under 35 U.S.C. 103(a)

Claims 5-6 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kimbrough, Rakib and Logston, in view of U.S. Patent No. 7,184,664 to Farmer, et al. ("Farmer"). Claims 5 and 6 depend from claims 4 and 1 and are patentable for at least the same reasons as claims 4 and 1 and for the specific elements recited in claims 5 and 6. Moreover, in rejecting claims 5 and 6, the Office Action cites Farmer for Farmer's disclosure of an optical transmitter 530 and a duplex filter 507 (See Office Action, Pages 8 and 9). However, the addition

of Farmer does not make up for the aforementioned deficiencies of Kimbrough taken in view of Rakib and in further view of Logston discussed above with respect to claim 4, from which claims 5 and 6 depend. Accordingly, Kimbrough taken in view of Rakib and Logston and in further view of Farmer does not make claims 5 and 6 obvious. Thus, claims 5 and 6 are patentable, and withdrawal of this rejection is respectfully requested.

V. New Claims 12-16 under 35 U.S.C. 103(a)

New claim 12 depends from claim 1 and recites that a receiving device is a single wire return device (SWRD) such that a single wire is provided between a modulator and at least one DHCT. New claim 12 is supported by at least FIG. 5 and Page 6, line 24 of the Specification. The cited art fails to disclose or suggest the subject matter of new claim 12. In particular, if the teachings of Kimbrough and Rakib were combined and modified in the manner suggested by the Office Action in the rejection of claim 1, in the purported combination would require two separate cables running to a set-top box of a television; namely, a first cable running from the QuPlexer 52 disclosed in Kimbrough, and a second cable running from the cable modem 28 disclosed in Rakib. Such a two wire system requires a reconfiguration of subscriber premises (e.g., the running of wire, hardware changes to DHCTs, etc.) in order to perform similar functionality as the system recited in new claim 12 (See, e.g., Spec., Page 3 and Page 4, lines 26-35). Accordingly, the subject matter of new claim 12 is not taught or suggested by the cited art, and no evidence suggests that claim 12 would be obvious to one of ordinary skill in the art. Therefore, new claim 12 is patentable.

New claim 13 depends from claim 4 and specifies that a modulator employs quadrature amplitude modulation (QAM). New claim 13 is supported by at least FIG. 5 of the present Application, as well as Page 7, lines 1-3 of the Specification. New claim 13 is patentable for at least the reasons stated above with respect to claim 4, and for the specific elements recited therein.

New independent claim 14 is similar to claim 4. Accordingly, new claim 14 is patentable for reasons similar to those described with respect to claim 4.

New claim 15 depends from new claim 14 and is similar to new claim 12. Accordingly, new claim 15 is patentable.

New claim 16 depends from new claim 14 and recites a downstream modulator located in a headend facility. Accordingly, new claim 16 is patentable.

For at least the reasons stated above, new claims 12-16 are patentable. Thus, consideration and allowance of new claims 12-16 is respectfully requested.

VI. CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 106.

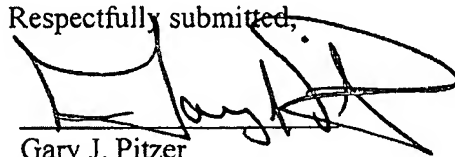
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